

UNITED STATES AMPHIBIOUS FORCIBLE ENTRY: AN EXPENSIVE NECESSITY

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USAWC STRATEGY RESEARCH PROJECT

UNITED STATES AMPHIBIOUS FORCIBLE ENTRY: AN EXPENSIVE NECESSITY

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ABSTRACT

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In May 2010, Secretary of Defense, Robert Gates, directed a review of the roles and missions of the United States Marine Corps while making remarks that large scale amphibious operations in today's threat environment were likely not feasible or necessary. Additionally, maintaining amphibious shipping and amphibious assault vehicles is extremely expensive and may not be supportable given the current United States economic and deficit situation. This research project will determine if the United States requires an amphibious forcible entry capability, or whether increasingly sophisticated technology and weapon capabilities make amphibious assault too deadly to attempt. Finally, if amphibious assault is necessary and feasible, the paper will conclude whether the United States possesses sufficient amphibious forcible entry capability, and if not, can it be fiscally achieved?

UNITED STATES AMPHIBIOUS FORCIBLE ENTRY: AN EXPENSIVE NECESSITY

We have to take a hard look at where it would be necessary or sensible to launch another major amphibious landing again – especially as advances in anti-ship systems keep pushing the potential launch point further from shore. On a more basic level, in the 21st Century, what kinds of amphibious capability do we really need to deal with the most likely scenarios, and then how much?

—Honorable Robert Gates
Secretary of Defense¹

Secretary Gates speech to the Navy League Sea-Air-Space Exposition delivered in May 2010 was the latest round in a historically recurring debate regarding the feasibility and necessity of amphibious forcible entry. However, the argument presented by Secretary Gates is not original to the Twenty-first Century but simply echoes similar assertions made by detractors of amphibious assault since the Gallipoli campaign in the First World War. Yet every time the death knell of amphibious assault is sounded, a crisis or event occurs that reaffirms the necessity for a maritime nation to possess the ability to attack from the sea and establish a lodgment on a hostile shore in the face of armed opposition.

While historically a need for a naval power to possess an amphibious capability can be demonstrated, the concerns posed by Secretary Gates regarding the current and future situation of the United States must be addressed. Specifically, does the United States require a forcible entry capability; or have advances in area-denial and anti-access technology given such a superior advantage to the defender as to make, “... invasion by sea almost an impossibility?”² If warranted, does the United States possess sufficient amphibious forcible entry capability, and if not, can it be fiscally achieved?

The Requirement: Is Amphibious Assault Necessary?

The United States is a maritime nation and currently the world's greatest naval power. As such, maintaining freedom of movement on the seas and ensuring access to the world's markets and resources is a stated objective of the National Military Strategy and a key component to achieving the national interests identified in the National Defense Strategy.³ Furthermore, securing these objectives benefit an entire global commerce, not just the United States. However, in order to ensure maritime freedom of movement and access, the United States, as a global naval power, must be able to exercise command and control of the sea. British naval historian and maritime strategist, Geoffrey Till, in his text *Seapower*, identified the ability to project military power ashore as one of two key inherent advantages derived from command and control of the sea, and included "assured access" among the inherent capabilities of a classic naval power.⁴

Of particular concern for the United States is the projection of power in the littoral region of the world, which can be defined as the area of the world within two hundred miles of the ocean. The importance of the littorals is evident from the fact that it contains three-quarters of the world's population, eighty percent of the world's capital cities, nearly all major centers of international trade, is the intersection of major trade routes, as well as being one of the few remaining places of untapped energy and mineral resources.⁵ Additionally, ninety percent of the world's goods and two-thirds of its oil are transported by sea.⁶ The United States military, most especially the Navy and Marine Corps, identify the littorals as the operating environment most likely to have persistent conflict and instability that will require continuous military operations, either through security stabilization efforts or "hybrid" warfare.⁷ As Marine Lieutenant General George

Flynn stated, “promoting stability and defeating aggression in the littorals to keep vital sea lanes and strategic chokepoints open is critical to our commercial and security interests.”⁸

Furthermore, Secretary Gates’ implied assertion that the United States would not want or need to conduct a large scale forcible entry from the sea appears to contradict not only historical precedent but also the assessment of the future operating environment and required strategic capabilities identified by his own Department of Defense. The *2010 Quadrennial Defense Review* (QDR) identified, “deter and defeat aggression in anti-access environments” as one of six critical mission areas for the United States military, and asserted that, “in the absence of dominant US power projection capabilities, the integrity of US alliances and security partnerships could be called into question, reducing US security and influence and increasing the possibility of conflict.”⁹

Even more concisely, the 2009 *Capstone Concept for Joint Operations* identified that, “diminishing overseas access is another challenge anticipated in the future operating environment...,” and that, “In war, this challenge may require forcible-entry capabilities designed to seize and maintain lodgments in the face of armed resistance.”¹⁰ The Capstone further asserted that the United States can no longer assume access to necessary ports and airfields from allies of host nations and determined that, “...given the likely limited number of permanent U.S. overseas bases and the proliferation of lethal antiaircraft and antiship weapons, future warfare may require forcible entry in the face of significant resistance.”¹¹

Fortunately, the overwhelming majority of wars fought by the United States have not been fought on its own shores. However this blessing requires the ability to project and sustain power overseas to win the Nation's wars and achieve its national security interests. In recent history, the United States has relied heavily upon assured access to ports and airfields in a relatively benign environment to allow the buildup of sufficient land and air power before commencement of combat operations. Yet when deploying bases are not available, "the ability to seize a joint lodgment... will likely remain a vital capability."¹² Ultimately, the United States requires the ability to conduct amphibious forcible entry operations because without it, "our nation's ability to project influence ... *assumes* access."¹³

The Threat: Is Amphibious Assault Feasible?

The main argument, that increasingly sophisticated technology and weapon capabilities make amphibious assault too deadly to men and materiel to attempt, has occurred since the beginning of modern war in the Twentieth Century. Post-war analysis of Gallipoli by military theorists and historians almost unanimously determined that new or improved weapons such as mines, integrated coastal defenses, submarines, and aircraft, provided such an overwhelming advantage to the defender as to make amphibious assault, "...difficult, indeed almost impossible."¹⁴ Yet twenty-seven years after Gallipoli every United States campaign of World War II, against enemies armed with much more capable weapons, began with a successful amphibious assault.

With the dawn of the atomic age following World War II, theorists and generals again predicted the doom of amphibious operations from the threat of nuclear weapons capable of destroying an entire amphibious task force. In October 1949, General Omar Bradley testified to the House Armed Services Committee that, "I am wondering

whether we shall ever have another large-scale amphibious operation.” Eleven months later the Inchon amphibious assault provided the turning point in Korea.¹⁵

The Falkland Island War in 1982 saw the British successfully conduct an amphibious landing against an enemy armed with modern aircraft and anti-ship missiles, despite the fact that sixteen years earlier, “the British defense minister declared that British armed forces would never again have to face another opposed landing...”¹⁶

Finally, the amphibious demonstration and feint conducted during the Persian Gulf War which tied down six Iraqi divisions and distracted Iraqi attention from the main effort was successful only because of a credible amphibious assault threat. This most modern example of large scale amphibious operations affirmed British strategist B. H. Liddell Hart’s view that, “amphibious flexibility is the greatest strategic asset that a sea based power possesses. It creates a distraction to a continental enemy’s concentration that is most advantageously disproportionate to the resources employed.”¹⁷

Anti-access and area denial (A2/AD) are the terms currently used to describe a nation’s objectives for defense against attack from the sea. As defined by Andrew Krepinevich, an adversary’s objective for anti-access capabilities is to prevent adversary forces the ability to use land bases within a theater of operations, while the objective for area denial is to sufficiently control / command the sea to prevent the freedom of action by enemy maritime forces.¹⁸

To achieve anti-access / area denial (A2/AD), Geoffrey Till identified deterrence, indirect forward defense, direct defense offshore, and direct defense onshore as four “interlinked elements” of a nation’s defense in depth against amphibious assaults and

raids.¹⁹ Skeptics of amphibious forcible entry in the modern century focus on the inherent strengths of the weapons used to conduct these four elements as a sufficient deterrent element. These weapons are traditionally mines, coastal artillery, surface ships, submarines and aircraft.

It is interesting to note however, that with the exception of cruise and ballistic missiles as the modern form of coastal artillery, the platforms and weapons employed, although undeniably much more lethal, remain the same threats since the First World War. These threats, while serious, are not unique to amphibious operations. Attacks by submarines, surface ships, or aircraft against capital ships have been present since World War I and counter-measures and aggressive offensive actions have been developed to counter each of these traditional threats. However, among these anti-access/area denial threats, mines and anti-ship missiles merit additional discussion because of their specific impact on the execution of amphibious assaults.

Mines are perhaps the oldest and most prolific threat to naval projection of power and amphibious operations. While the landings at Inchon are often used as an example of the strategic effect of amphibious operations, reference is seldom made to the subsequent amphibious assault against Wonsan, on the eastern side of the peninsula. Much to the chagrin of the Marines, the large number of mines laid and corresponding slow mine clearance operations by the Navy, resulted in the port being seized by the Army crossing the peninsula before the sea lanes were eventually cleared weeks later. A more recent example was the 1991 Persian Gulf War where the massive number of mines laid off the coast of Kuwait was often cited as a key reason why an amphibious assault was not conducted by the Marines.

Because the four primary types of mines can be employed from the surf zone to deep water, mines are utilized for both Till's elements of "direct defense offshore" and "direct defense onshore" elements.²⁰ They are extremely effective and relatively inexpensive, and do not require complicated means to emplace or employ. In recent history, mines have severely damaged or sunk four times as many United States Navy ships as all other means of attack combined.²¹ Although in deep water they threaten both aircraft carriers and large amphibious ships, it is their use in denying or delaying access to the littorals by surface assault landing craft that truly affect amphibious operations.

Countering a littoral mine threat is difficult for amphibious operations for several reasons. First and foremost, conducting mine reconnaissance and mine clearance is time consuming and overt, which can negatively impact tactical surprise of desired landing areas. As such, the enemy can take advantage of the intelligence provided by observing deeper water mine clearing operations and deploy large quantities of shallow water mines. In addition, because mines are detected mainly by sonar, the shallower the water, the harder the mines are to detect, which impacts the assault lanes of the amphibious landing crafts.²² Even when lanes are cleared in the waters leading to the surf zone, the existing ability to mark these cleared lanes for the assault craft is inadequate. Furthermore, mines in the final few meters of the surf zone are currently "breached by force" typically without the use of reconnaissance effort to find gaps in the enemy defenses.²³

Yet, the mine threat is being actively addressed and can be countered. The first means is to disperse the enemy's available mining assets to cover multiple locations

and strike where he isn't prepared. For an adversary to defend potentially hundreds to thousands of miles of coastline, the required number of mines and the ability to deploy them can be extremely limiting. Thus the defender must attempt to divine potential landing sites based on traditional requirements for landing beaches. Historically, these landing beaches had to be large enough to land sufficient forces and logistics and have points of access to further inland objectives. In addition, typical landing craft characteristics required specific landing beach characteristics. These known requirements aided the enemy in narrowing his focus to more likely potential beaches.²⁴

By increasing the possible penetration locations of a hostile coast, the threat of amphibious landings force an enemy to disperse combat power to defend multiple locations. As an integral element of Operational Maneuver From the Sea (OMFTS) and Ship To Objective Maneuver, the Navy's Landing Cushion Air Craft (LCAC) and the Marine's desired capability until recently expressed as the Expeditionary Fighting Vehicle (EFV), enable the Navy and Marine Corps to use eighty percent of the world's coastline compared to seventeen percent using conventional landing craft.²⁵ In conjunction with conducting an assault from over the horizon, the increased available landing sites make it increasingly difficult for the defender, "to predict where forces would land and move forces to block it."²⁶

However, the prevention or limitation of the ability to deploy mines is perhaps the best way to reduce the threats of mines. Mines are most easily destroyed while in storage before they are emplaced, and their means of deployment are also susceptible to attack. Therefore targeting, as part of joint shaping operations, of known or potential

locations that contain mines or mine-laying capability would greatly simplify the level of threat.

Once mines are encountered, successful mine countermeasure (MCM) operations require five skills, the ability to search an area, locate mine-like objects, classify as mines, identify the specific threat, and neutralize the mine.²⁷ Currently the Navy possesses a “MCM Triad” consisting of surface ships, helicopters, and Explosive Ordnance Disposal (EOD) man/mammal systems to accomplish these skills.²⁸ Ultimately, the Navy’s goal is to reduce the time between detecting a threat and neutralizing the mine while keeping the ship, sailor or mammal out of the minefield.²⁹

The fourteen aging Avenger class minesweepers and the heavy lift MH-53 Sea Dragon helicopter squadrons provide the current dedicated surface and airborne mine counter- measure capability. However, the MCM mission package for the new Littoral Combat Ship (LCS) with its MH-60 multi-mission helicopters is scheduled to assume the primary organic MCM capability for the fleets. The LCS and associated helicopters are designed to attack mines from outside the mine threat area using unmanned systems with an expected initial operating capability in 2013 and full operational capability in 2015.³⁰

The subsurface leg of the “triad” consists of EOD personnel, equipment and mammal systems. These EOD personnel support covert exploration and reconnaissance of the “very shallow water and seaward approaches” in support of operations such as amphibious assault.³¹ Although controversial, Navy EOD teams also operate Marine Mammal Systems (MMS) such as dolphins, sea lions and beluga whales for mine detection and neutralization. Although the Navy is working on systems

to replace their use, these mammals are the only currently deployable capability that can detect buried bottom mines.³²

The Navy's embryonic Assault Breaching System is developing standoff weapon systems specifically to counter mine and obstacle threats in the surf and beach zones, the area of particular interest to amphibious operations.³³ Until the Assault Breaching System is operational, the interim surf zone and very shallow water breach system is the Joint Direct Attack Munition - Joint Assault Breaching System (JDAM-JABS). Fielded in 2007, it is essentially a precision air delivered sub-munition bomb designed to breach a landing lane by destroying our neutralizing surf zone mines.³⁴

The threat of naval mines has been present for over two centuries and will only increase in the foreseeable future. Mines are a threat, not only to amphibious ships, but to capital ships such as carriers and submarines, and the United States must address this threat or acquiesce to the area denial implicit in their use. Recognizing this imperative, the Navy has made "significant investments for the future mine-defense force," and the Chief of Naval Operations believes, "we are more prepared than ever to combat the... threat that mines impose on our ships and our sailors."³⁵ Consequently, the mine threat, while challenging and without a perfect solution, can be mitigated, *provided* command interest maintains sufficient funding against competing priorities.

It is the Anti-Ship Ballistic and Cruise Missiles (ASCM) that are recognized as the A2/AD threat that most significantly affects amphibious operations. Historically amphibious assaults had to be launched within a few thousand yards of the shore, making the large ships inviting targets for the defenders. In large part, the development of long range anti-ship ballistic missiles and the increasing range and accuracy of these

missiles resulted in the concept to launch amphibious assaults from over the horizon (OTH) so that radars and guidance systems would not detect the large deck amphibious ships or the carrier battle groups. Of particular concern is the current development of a Chinese anti-ship ballistic missile with a range over 1,500 km and a maneuverable warhead that can destroy or disable surface combatants such as aircraft carriers or surface combatants *when* combined with appropriate surveillance and targeting systems.³⁶

In conjunction with missile technology, the Chinese People's Liberation Army (PLA) Navy is working to improve its OTH radars, as well as imagery satellites, to further increase the accuracy and lethality of its anti-ship missiles.³⁷ This may force the United States Navy to operate well outside the operational limits of its current and projected carrier strike aircraft.³⁸ Analysts identify that, "the projected PLA anti-ship ballistic missile capability is clearly the most dramatic emerging threat to United States Navy operations in the Western Pacific."³⁹ As identified by Secretary Gates remarks, this increasing threat range risks requiring the launch of amphibious assaults even farther than the currently planned twenty-five nautical miles.

However, the success of this anti-access/ area denial capability is dependent upon the mutual development of both an anti-ship ballistic missile capability and the necessary over the horizon (OTH) capability to conduct surveillance and precision targeting of surface ships. Currently, operations conducted from over the horizon can overcome the effectiveness of older versions of anti-ship cruise missiles.⁴⁰ To defend against the developing missiles, China's increasing reliance on satellite and networked sensors, similar to the United States, provides a vulnerability that can be attacked to

reduce its effectiveness, and “could be considered the Achilles heel of its A2/AD approach.”⁴¹ The defender’s systems can be attacked not only kinetically but increasingly through an attack in cyberspace or in the electromagnetic spectrum. Furthermore, once these targeting systems are “blinded,” launching an assault from over the horizon, using the “sea as a maneuver space,” greatly increases the flexibility and timing of an attack and thus increases its likelihood of success.

Furthermore, recent congressional testimony by the Navy and Marine Corps not only emphasize the effectiveness of these combined counter measures, but directly contradicts Secretary Gates’ quoted concerns regarding the potential launch point of amphibious assaults. In January 2011, the Navy, after nearly two decades of stressing the need to operate twenty-five nautical miles from shore to counter anti-ship cruise missiles, stated that amphibious operations can be executed from as close as twelve nautical miles. This new assessment is based on, “newly fielded equipment inside of the Department of Navy,” that primarily consists of integrated fire control and anti-ship missile swarm capabilities designed to allow Navy ships to operate closer to shore.⁴² As a result, the Marine Corps is reviewing the operational requirements for its replacement amphibious tractor in the desire that it will reduce cost and increase available quantities.

An additional rapidly emerging twenty-first century threat is cyber-attack against a country’s networked computer and battle-force systems, especially satellite dependent capabilities. The loss or interruption of satellite capabilities and/ or the disruption or destruction of network battle command systems are critical vulnerabilities for United States forces, especially when operating at sea, that could cripple United States power-projection operations by future opponents.⁴³ It is predicted, for example, that within a

decade that China “will likely have the ability to comprehensively deny or severely degrade United States forces theater relevant space assets.”⁴⁴

However, the United States also can, “employ extensive electronic attack operations to deny ...use of the electromagnetic spectrum,” that would blind an opponent’s use of space assets or targeting and surveillance capabilities.⁴⁵ This importance of warfare in man-made domains is reflected in the creation of multiple commands in the United States military, such as U.S. Cyber Command and the Navy’s 10th Fleet, devoted specifically for cyber warfare. In short, cyber and electronic attack is not only a threat to defend against, but also a weapon to employ against adversaries.

Critics of amphibious operations seem to assume that amphibious operations will occur in a vacuum, without prior shaping operations, and employing only the naval amphibious ready group and embarked Marines. On the contrary, amphibious assaults, because of the range of threats identified, are truly joint campaigns that will rely on the capabilities brought by all the individual Services to succeed. Attacks by submarines, surface ships, or aircraft against capital ships do not in themselves prevent operations but require the accomplishment of certain conditions, such as air superiority or local command/control of the sea, before amphibious operations can occur.

Therefore, large scale amphibious assaults will not be “cold start” operations but will rely upon the establishment of certain conditions prior to execution. This is not a new concept. Geoffrey Till identified five historical requirements for the conduct of amphibious operations, two of the most important being “maritime superiority and joint operations.”⁴⁶ Achieving maritime superiority includes control above, below, and on the sea through joint shaping operations before launching an assault. Indeed,

Undersecretary of the Navy, Robert Work, emphasized that, "a joint theater-entry operation will be a deliberative undertaking with weeks of pre-landing shaping operations..." with the objective being the suppression of, "an enemy's battle network, capable of firing dense salvos of guided weapons." ⁴⁷

Developing counter-measures to weapons capabilities is a historical and natural element of warfare. For example, the nascent AirSea Battle concept between the United States Navy and Air Force seeks to utilize the joint capabilities of both services to defeat the anti-access/ area denial capabilities of a potential adversary such as China or Iran. Its first stage objective includes, "seizing and sustaining the initiative in the air, sea, space and cyber domains."⁴⁸ The lines of operations outlined by AirSea Battle are essentially the same shaping operations required prior to conducting amphibious operations, requiring only additional operations for mine clearance in shallow water, very shallow water and surf zone. In addition, new technologies such as laser weapons, touted as a "game-changer," are also being researched to counter the anti-ship missile threat.⁴⁹ As Till noted, "Throughout history... every new weapon has spawned its counter, and this will continue."⁵⁰

Finally, in decrying the inability to conduct amphibious forcible entry, critics overlook the important fact that, "despite their obvious and much-vaunted difficulties, most amphibious assaults succeed, and most attempts at defense against them fail."⁵¹ Despite the advances in threat capabilities, corresponding offensive capabilities and concepts such as Operational Maneuver from the Sea (OMFTS) and AirSea Battle have, "been able to deal with the intrinsic odds against landing operations, especially when in combination with the surprise factor and the displacement effects."⁵²

Therefore, although “theater forcible entry” against a modern A2/AD defense in depth is difficult, operational concepts as well as developing weapons’ capabilities, will maintain amphibious assault as a viable option for the combatant commander. However, this is only true provided that the required resources necessary to obtain these capabilities are applied.

The Cost: Is Amphibious Assault Affordable?

Consequently, cost, not the A2/AD threat, is the primary obstacle for the United States to obtain the necessary capability to launch and sustain a campaign from the sea. Critics assert that this large financial commitment is unfeasible in a budgetary constrained environment. In truth, modern shipbuilding is expensive, and especially so for the specialized platforms required for forcible entry from the sea. The current budget deficit and competing missions such as the Navy’s requirement to provide strategic ballistic missile defense leave the financial means to obtain the necessary level of amphibious platforms and equipment in doubt.

For instance, the Navy’s shipbuilding budget for 2011 was \$16.1 billion dollars to build merely nine new ships, of which only one was specifically designed for amphibious assault.⁵³ That particular ship, the new LHA America class helicopter amphibious vessel, is predicted to cost more than three billion dollars per ship, making it among the most expensive ship procurements for the Navy.⁵⁴ Additionally, the LPD-17 San Antonio class ship, the latest amphibious ship class commissioned by the Navy, costs approximately \$2.04 billion per ship. To compound the cost issue, the first ships of this class had significant problems with poor workmanship, design, and electrical mistakes that dramatically increased costs and reduced reliability which left them significantly less than fully mission capable.⁵⁵

Furthermore, the ability to conduct an over the horizon, ship to objective maneuver (STOM) amphibious operation requires not only amphibious ships but other essential, and expensive, capabilities such as mine-warfare platforms, high speed ship-to-shore connectors, Maritime Prepositioning Force (MPF) ships, and naval surface fire support (NSFS) platforms. The cost necessary to research, develop, and acquire sufficient levels of these myriad capabilities only add to the budget crisis. A final related concern is maintaining sufficient service command interest and commitment. For example, at the end of the Persian Gulf War with the related interest in countering naval mines, the Mine Warfare budget grew to 2.5 percent of the Navy's total obligation authority (TOA), yet today it is approximately only one percent of the Navy's TOA.⁵⁶

Ship to Shore Connectors are an essential element to assault from the sea. Yet, currently the only Navy and Marine Corps high speed surface connector in the inventory is the LCAC. With only eighty LCACs in the Fleet, there are insufficient numbers of LCACs as well as traditional landing craft to support the stated lift requirement for two Marine Expeditionary Brigades (MEB) plus a MPF MEB.⁵⁷ Furthermore these LCACS are getting old with the first craft's scheduled service life ending in 2004.⁵⁸ Although the LCAC is undergoing a Service Life Extension Program (SLEP) designed to add ten years of service life, a replacement vehicle of sufficient capability and quantity is needed. The LCAC replacement, with the original name "Ship to Shore Connector" (SSC), is under development but the limiting, and still unknown factors, will be the associated cost and priority the SSC will have compared to other acquisitions.

Perhaps the most adverse decision affecting the ability to conduct amphibious operations is the verdict to cancel the Marine Corps' Expeditionary Fighting Vehicle,

designed to carry Marines from twenty-five nautical miles over the horizon to the objective. Cancellation of the program is also the most illustrative example that cost is the primary constraint. Begun in 1996 with an estimated cost of eight billion dollars for 1,013 vehicles, the program was reduced to 573 vehicles at a price of twenty-three million dollars per vehicle and a total predicted cost of fifteen billion dollars.⁵⁹ This single program would have consumed ninety percent of the Marine Corps' ground equipment budget.⁶⁰ Combined with the severe developmental difficulties, cost increases and other delays, the program, for years constantly on the chopping block, was cut from the defense budget in January 2011.

However, there are several concerns created by the cancellation of the EFV program. First and foremost is that an amphibious tractor capable of conducting OTH surface assault remains an essential capability. Despite the Marine Corps assertion that it can develop a new, less expensive vehicle and gain operational capability faster than the standard decade, the fact remains that currently there is a significant capability gap between the professed operational ways (STOM and OTH) and the available means.⁶¹ Furthermore, this essential, but currently unarticulated, vehicle must now compete against other requirements of the Department of Navy's budget. This competition for funding may prevent the acquisition of its required capabilities.

As a result of decommissioning ships, competing requirements, and skyrocketing shipbuilding costs, the United States inventory of platforms designed to conduct or support amphibious assaults has dramatically and continuously decreased since the end of World War II. At the end of World War II, the United States Navy was capable of deploying via amphibious shipping 13.5 percent of America's total ground force (Army

and Marine Corps). However, currently the Navy has barely sufficient amphibious shipping to deploy a mere two percent of the joint ground force.⁶² This decrease in capability comes despite the fact that all the Services increasingly tout themselves as “expeditionary.” The Sea Services, in effect, may now have reached a “tipping point” where the United States no longer possesses sufficient capability to conduct large scale forcible entry from the sea.

The United States Marine Corps, which has Title 10 responsibility as lead for the development of amphibious doctrine and capabilities, identified the amphibious forcible entry requirement as the ability to conduct a simultaneous assault via surface and air by two MEB Assault Echelons (AE). A third “rapid reinforcement” MEB, or joint equivalent, was planned to be able to deploy, assemble at sea, and project ashore using a Maritime Prepositioning Force (Future) (MPF(F)) capability that would not require a port or airfield for employment.⁶³

To provide sufficient amphibious lift for a single MEB AE requires nineteen amphibious ships in a combination of large decks and smaller amphibious ships. When doubled for the second MEB AE and including an allowance for maintenance or overhaul of ships, forty-one ships, divided among three different platform classes, is the ideal number of amphibious platforms necessary. However, in negotiation with the Navy from 2007 to the present, the Marine Corps has accepted an increasing level of “operational risk,” and ultimately reduced the required number of ships to fifteen operational ships per MEB AE.⁶⁴

This reduction was accomplished by moving twenty percent of the MEB AE vehicles and twelve percent of its cargo to the Assault Follow On Echelon (AFOE).⁶⁵

Including a maintenance allowance, the total minimum requirement currently agreed to by the Marine Corps and the Navy is thirty-three amphibious assault ships. However, under the current procurement plan, the earliest the Navy is scheduled to achieve this minimum requirement is 2016, provided there is no delay or change in the current build plan.⁶⁶

An additional concern was that a primary factor mitigating the risk of reduced numbers of assault amphibious shipping was the reliance on the MPF (F) and its ability to project an additional follow-on MEB ashore.⁶⁷ However, the Navy removed the MFP (F) program of fourteen ships from its thirty year plan and replaced it with a plan for three smaller less-capable, but more affordable squadrons. The resulting loss of capability could reduce the effectiveness of the rapid reinforcement of the Marine Corps planned assault force.⁶⁸

Competing internal priorities and prejudices in the Navy are also an issue.⁶⁹ In June 2010, the Senate Armed Service Committee, concerned about the difference between the Navy's professed objective of achieving the necessary amphibious platforms and its thirty-year ship building plan, directed the Congressional Budget Office (CBO) and the Secretary of Defense to conduct two independent reports on the Navy's ability to meet amphibious ship requirements for the Marine Corps.⁷⁰ In addition, the House Armed Services Committee, concerned that the Navy was decommissioning amphibious ships at an unacceptable rate, inserted language in the Navy's budget bill that prevented the Navy from decommissioning ships without first notifying the committee in writing. It also required the Navy to keep two Tarawa class amphibious ships in service until the first two America class ships were delivered.⁷¹

With the cancellation of the EFV and the current and projected shortage of necessary amphibious shipping, the United States currently does not possess the stated required capability to conduct a large scale amphibious assault. The question becomes how to reduce the breach between the required capability and available resources, and to mitigate the risk of any remaining gap. There are two inter-related elements to address, the size and composition of the embarked forces and the size and composition of the amphibious fleet.

In addition to a lack of ships, the exponentially increased weight of embarked equipment has played havoc with the ability to support amphibious assault. The numbers of Marine vehicles, their sizes, and weights have all dramatically increased. Virtually all equipment in development is heavier than what it is replacing.⁷² As a result, when Marine units embark, fifty-five percent of the ships exceed weight and stability limits while an additional sixteen percent meet weight limits but exceed stability limits.⁷³ Weight has now become the sixth, and overriding, embarkation planning factor.⁷⁴

To achieve a supportable amphibious capability, the Marine Corps must reexamine the type and quantity of equipment necessary to conduct operations. After a decade of waging two protracted land campaigns, the Marine Corps has adopted too heavy a footprint to specialize in expeditionary operations. Marines must balance the requirement to be light enough to get to a crisis fast, but heavy enough to remain until additional forces arrive. The Corps will not be successful until it can refocus on the key elements necessary to conduct amphibious and expeditionary operations.

There are two competing views regarding the size and shape of the fleet platforms required for amphibious operations. The first is the traditional view that

advocates platforms with large carrying capacity and capability such as the large deck LHA class ships. The competing view, which is gaining traction with the expansion of Marine distributed operations concepts, is the use of a, “large number of small, and individually less valuable platforms,” that rely on networked systems, “to provide the same combat power as a conventional fleet.”⁷⁵

Given the current financial condition of the United States, the increased use of multiple role platforms may provide a suitable mitigation. There will certainly remain a requirement for large deck amphibious ships capable of providing vertical assault support as well as Close Air Support to the amphibious force. However, utilizing the concept of distributed operations, company sized Marine forces, embarked on smaller amphibious ships and multi-role ships such as the Littoral Combat Ship (LCS), could be oriented primarily toward the lower end of the conflict spectrum such as security cooperation and engagement, or small-scale crisis response. When required, these dispersed forces could aggregate to form larger forces to conduct amphibious assaults.⁷⁶

This increased number of platforms and the dispersion of ships would take advantage of the maneuver space of the sea and use dispersed tactics to confuse the enemy.⁷⁷ It would also reduce the potential for cataclysmic loss to the assault force if one ship was destroyed. An additional benefit would be the capacity to increase “shape” and “deter” operations in support of the combatant commander theater campaign plan from the enlargement in available platforms and formations.

Pursuit of this option requires two actions. First, the Marine Corps must devote more intellectual thought on how to conduct distributed operations centered on the

“most likely operational sweet spot: the Marine rifle company.”⁷⁸ Second, the Navy must develop mission modules for the LCS that support amphibious operations such as a Naval Surface Fire Support module, and a troop embarkation module that includes ship to shore connectors that can operate from the LCS.

Conclusion

For the United States to maintain maritime freedom of movement and ensure access to the world’s markets and resources, as well as maintain its position as a military superpower, it must embrace the fact that amphibious power projection is essential. While difficult; requiring specialist skills, equipment, and training, and therefore inherently expensive; failure to maintain a feasible capability, “concedes no-go areas to future adversaries, undermines our diplomacy and alliances, and allows adversaries to focus resources on our remaining power-projection options perhaps with greater effectiveness.”⁷⁹

All power projection, whether by air or sea, is susceptible to an A2/AD threat. These threats, while serious, are not unique to amphibious operations, and counter-measures and aggressive offensive concepts such as AirSea Battle and new weapon technologies are able to counter these threats. Ultimately it is only by the exploitation of sea power, that the United States can ensure the ability to conduct and sustain large scale, long-term theater assured access and power projection.

Opponents, citing that the current wars were conducted without the need for forcible entry, argue that the United States can accept risk in forcible entry capability. First, this argument implicitly assumes that United States forces will have benign theater access and time to build combat power before the beginning of a conflict. Second, it ignores the utility of amphibious forces for phase 0 and phase 1 of a combatant

commanders' theater campaign plan to prevent conflict and mitigate crises.⁸⁰ Since the end of the Cold War, the Marine Corps has conducted 108 amphibious operations and approximately 1,000 amphibious exercises and Theater Security Cooperation (TSC) events. As a result, the nation's amphibious capability was required at an annual rate more than double that of the previous forty-five years.⁸¹

It is cost, not the A2/AD threat, which is the true limiting factor for maintaining a credible amphibious assault capability for the United States. Decommissioning ships, competing requirements, and skyrocketing costs have continuously decreased the United States inventory of platforms designed to conduct or support amphibious assaults since the end of World War II. As a strategic consequence, the United States currently does not possess sufficient capability in either amphibious ships or enablers to conduct large scale forcible entry from the sea.

However, potential strategies for reducing the gap between available resources and ways exist. The expansion of more platforms to incorporate an amphibious mission, combined with the development of the Marine rifle company as the basic building block for embarked forces, is one example of how the United States can achieve a credible amphibious assault capability. This requires not only commitment from the Navy to procure the necessary ships and enablers, but also for the Marine Corps to adjust the basic building block for embarkation and employment from the battalion to the company. By adopting these changes, the United States would have a more affordable and robust amphibious assault capability as well as an increased capacity to conduct security cooperation and engagement that can "limit regional conflict, foster and sustain

cooperative relationships, and prevent or contain local disruptions before they impact the global system.”⁸²

Amphibious forces are able to serve as a forward deployed presence in the littoral crisis areas of the world without violating a nation’s sovereignty. When combined with the ability to decisively operate across the spectrum of operations, these forces become invaluable tools in the United States’ arsenal for conventional war and “naval diplomacy.”

Unfortunately this capability does not come cheaply. Currently the United States is addressing this chasm between the nation’s stated ends and its available means by an exponential acceptance of risk. Ultimately, it is not a question whether amphibious assault is required or whether it is feasible, it is. Instead the question is whether the United States is willing to commit the resources necessary to maintain a strategic capability that is essential to achieve its stated national security strategy. Eventually the United States must determine either to adjust its national security strategy or obtain the necessary capability.

Endnotes

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⁷ U.S. Marine Corps, *Expeditionary Maneuver from the Sea* (Washington DC: U.S. Department of the Navy, June 2008), 1.

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⁹ Robert Gates, Report of the Quadrennial Defense Review (Washington DC, February 2010), 32, quoted in Robert O. Work, and F.G. Hoffman "Hitting the Beach in the 21st Century," 18.

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¹² Work, "Hitting the Beach in the 21st Century," 18.

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¹⁴ Victor H. Krulak, *First To Fight: An Inside view of the U.S. Marine Corps* (Annapolis: Naval Institute Press, 1984), 72.

¹⁵ Ibid., 71.

¹⁶ Edgar O'ballance, "The Falklands, 1982," in *Assault from the Sea: Essays on the History of Amphibious Warfare*, ed Merrill L. Bartlett, (Annapolis: Naval Institute Press, 1983), 429, quoted in Bird, *Amphibious Assaults: Obligatory or Obsolete?*, 5.

¹⁷ B.H. Liddell Hart, "Marines and Strategy," *Marine Corps Gazette* 44, no.7 (July 1960): 10-17; published in *U.S. Army War College Reading Theater Strategy and Campaigning Vol II* (Carlisle Barracks PA: U.S. Army War College, 2010), 15-53.

¹⁸ Andrew F. Krepinevich, Why AirSea Battle? (Washington DC Center for Strategic Budget Analysis 2010), 9-10.

¹⁹ Till, *Seapower: A Guide for the Twenty-First Century*, 204-208.

²⁰ The surf zone is defined as a water depth of less than ten feet, while deep water is defined as a depth greater than 200 feet; Scott C Truver, "US Navy MCM: The easy Way is Always Mined," *Naval Forces* 31, no 3 (2010): 9, in ProQuest (accessed 28 October 2010).

²¹ Mines have sunk or damaged fifteen ships, missiles-1 ship, torpedo/aircraft – 2 ships and small boat, terrorist attack – 1 ship, Ibid., 8.

²² Norman Friedman, “The Surf Zone and Very Shallow Water,” *Naval Forces* 31, no 3 (2010): 96, in ProQuest (accessed 28 October 2010).

²³ Mark E. Sanders, *Amphibious Operations in a Mine Environment a Clear Path To The Beach....Unmarked*, Strategy Research Project (Maxwell AFB: Air Command and Staff College, April 2000), 5.

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²⁶ Friedman, “The Surf Zone and Very Shallow Water,” 96.

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²⁸ Truver, “US Navy MCM: The easy Way is Always Mined,” 9.

²⁹ Ibid., 14.

³⁰ Ibid., 17.

³¹ Ibid., 16.

³² Ibid., 13.

³³ The Coastal Battlefield Reconnaissance and Analysis (COBRA) System is designed to detect mine threats and obstacles in the surf zone and beach exit areas and is an integral part of The Assault Breaching System. COBRA combines with developing systems such as lane marking, precision craft navigation, and counter-mine and counter-obstacle programs; Ibid., 16.

³⁴ Ibid., 16.

³⁵ Ibid., 13, 19.

³⁶ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2010* (Washington DC: U.S. Department of Defense, 2010), 2.

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³⁸ Jan Van Tol et al., *AirSea Battle, A Point of Departure Operational Concept* (Washington DC Center for Strategic Budget Analysis 2010), 19-20.

³⁹ Ibid., 42.

⁴⁰ United States Marine Corps, *Amphibious Operations in the 21st Century* (Quantico, VA: United States Marine Corps, March 18, 2009), 27.

⁴¹ Van Tol, *AirSea Battle, A Point of Departure Operational Concept*, 56.

⁴² General Joseph Dunford, Assistant Commandant of the Marine Corps testified, “Historically, we have planned over the past two decades for Marines to be discharged at 25 nautical miles. In recent discussions with the Navy, those figures have in fact changed...And we think it’s somewhere in excess of 12 nautical miles, but something less than 25 nautical miles.”; Vice Chief of Naval Operations, Admiral Jonathan Greenert, agreed saying, “...we believe—and I’m in concurrence with General Dunford—somewhere around 12 miles, maybe a little bit more, is acceptable. We’ve modeled this closely; we’ve war-gamed it closely. We’re reasonably comfortable.” U.S Congress, House, Armed Services Committee, *Hearing on Defense Budget Reductions*, 112th Con., 1st sess., January 26, 2011, 16-17.

⁴³ Krepinevich, *Why AirSea Battle?*, 16.

⁴⁴ Van Tol, *AirSea Battle, A Point of Departure Operational Concept*, 27.

⁴⁵ *Ibid.*, 62.

⁴⁶ The other three are Specialist skills and training, surprise and maneuver, and compensatory military-technological advantage, Till, *Seapower: A Guide for the Twenty-First Century*, 191-197.

⁴⁷ Work, “Hitting the Beach in the 21st Century,” 20.

⁴⁸ Van Tol, *AirSea Battle, A Point of Departure Operational Concept*, 52-53.

⁴⁹ Lauren King, “Breakthrough Reported in Navy Laser Weapon Technology,” PilotOnline, (Norfolk Virginian-Pilot), 21 January 2011, <http://hamptonroads.com> (accessed 29 January 2011).

⁵⁰ Till, *Seapower: A Guide for the Twenty-First Century*, 241.

⁵¹ *Ibid.*, 208.

⁵² *Ibid.*, 196.

⁵³ Richard R. Burgess, “Larger Fleet Support: Navy Budget Bills Boost Ship Procurement, Curtail Decommissionings,” *Seapower* 53, no 11 (November 2010) 16 – 18.

⁵⁴ Grace V Jean, “By Air or By Sea? Marines question the utility of their new amphibious ship,” *National Defense* 93, no. 658 (September 2008) 42-44.

⁵⁵ Ronald O'Rourke, Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress (Washington DC: Congressional Research Service, October 15, 2010), 6.

⁵⁶ Truver, “US Navy MCM: The easy Way is Always Mined,” 9.

⁵⁷ United States Marine Corps, *Amphibious Operations in the 21st Century*, 26.

⁵⁸ Valpolini, "Amphibious Landing Craft," 14.

⁵⁹ Andrew Feickert, *The Marines' Expeditionary Fighting Vehicle (EFV): Background and Issues for Congress* (Washington DC: Congressional Research Service, 1 September, 2010), 7; Otto Kreisher, "Legislative Limbo: Marine Corps' EFV, F35B programs await return of lawmakers," *Seapower* 53, no 11 (November 2010) 20 – 22.

⁶⁰ Dakota L. Wood, "Caught on a Lee Shore," *The American Interest Magazine* (Autumn 2010) 22.

⁶¹ U.S Congress, House, Armed Services Committee, *Hearing on Defense Budget Reductions*, 19, 37-38,39.

⁶² Work, "Hitting the Beach in the 21st Century," 21.

⁶³ Ronald O'Rourke, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, 13; United States Marine Corps, *Amphibious Operations in the 21st Century*, 16.

⁶⁴ O'Rourke, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, 1.

⁶⁵ Assault Follow On Echelon is composed of assault troops, vehicles, equipment and supplies not needed in assault but required to sustain the assault. It is normally required in the objective area no later than 5 days after the commencement of an assault. O'Rourke, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, 13; United States Marine Corps, *Amphibious Operations in the 21st Century*, 17.

⁶⁶ O'Rourke, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, 5,13.

⁶⁷ *Ibid.*, 13.

⁶⁸ Phillip Ewing, "USMC Loses Latest Round of Amphib Battle," *Defense News* 25, no. 11 (15 March 2010) 34.

⁶⁹ The recurring lack of priority given by the Navy regarding the procurement of amphibious shipping is reflected in the Chief of Naval Operations 2010 guidance which contained only lukewarm platitudes regarding working with Marine Corps such as, " I am committed to keeping the lines of communication open,..." Indeed amphibious shipping was not even listed as one of the CNO's top programs. Garry Roughead, *Chief of Naval Operations Guidance 2010* (Washington DC: United States Navy, October 2010)

⁷⁰ Both the CBO and the Secretary of Defense reports are due in March 2011. The specific areas to be covered by each report are slightly different but reflect the common concern of the Navy not meeting sufficient capability. O'Rourke, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, 10-11.

⁷¹ Richard R. Burgess, "Larger Fleet Support: Navy Budget Bills Boost Ship Procurement, Curtail Decommissionings," *Seapower* 53, no. 11 (November 2010) 16 – 18.

⁷² Grace V Jean, "Balancing Act: Cost of Current Operations Jeopardize Marine Corps' Modernization Plans," *National Defense* 94, no. 675 (February 2010) 30-31.

⁷³ Grace Jean, "Numbers Game: More Amphibious Ships are needed, Marines Contend," *National Defense* 92, no. 651 (February 2008) 20-21.

⁷⁴ United States Marine Corps, *Amphibious Operations in the 21st Century*, 8.

⁷⁵ Till, *Seapower: A Guide for the Twenty-First Century*, 241.

⁷⁶ Dakota Wood advocated this concept as a "Littoral Operations MAGTF and a Littoral Operations Squadron" centered around a reinforced Marine company embarked aboard an LPD and two to three Littoral Combat Ships (LCS). This force would include embarked rotor-wing assets and surface connectors and would be suitable for the phase 0 and phase 1 of Theater Campaign Plans. The USMC EMFTS Operating Concept identified the Marine rifle company as the "operational sweet spot" for developing capabilities and capacities needed, "to conduct the full range of missions-in either a distributed fashion or as the key building block for larger formations,..." ; Dakota L. Wood, *The US Marine Corps: Fleet Marine Forces for the 21st Century*, Center for Strategic And Budgetary Assessments (Washington, DC, 03 November 2008), 54; United States Marine Corps, *Expeditionary Maneuver From the Sea: Marine Corps Operating Concept*, 3.

⁷⁷ Till, *Seapower: A Guide for the Twenty-First Century*, 241.

⁷⁸ "Future capabilities must be focused on increasing the lethality, sustainability, maneuverability, flexibility, and survivability of *the operational sweet spot, the Marine rifle company...necessary* to prevent crisis and prevail across the range of military options." United States Marine Corps, *Expeditionary Maneuver From the Sea: Marine Corps Operating Concept*, 3.

⁷⁹ Work, "Hitting the Beach in the 21st Century," 21; Till, *Seapower: A Guide for the Twenty-First Century*, 250.

⁸⁰ United States Marine Corps, *Amphibious Operations in the 21st Century*, 4.

⁸¹ Of these 108, 4 were amphibious assaults and 80 were amphibious support to other operations; Flynn, "Versatility in the Age of Uncertainty," 23.

⁸² These are 3 of 6 "strategic imperatives" for U.S. naval power. The other 3 are "deter major power wars, win our nation's wars, and contribute to homeland defense in depth." U.S. Department of the Navy, *A Cooperative Strategy for 21st Century Seapower*, 7-10.

